Figure S1. Cell viability detected by CCK-8 assay. The hMSCs were treated with different concentrations (0, 10, 100 and 250 μg/mL) of silica NPs for 24 hours. Thereafter, the medium was changed into osteogenic medium and CCK-8 tests were conducted on day 7 and 14 after osteoinduction. Values are expressed as mean ± SD. (n=3 for each sample). No significant differences (p > 0.05) compared with control group were found for all the tested conditions.

Figure S2. Effect of silica NPs on the formation of mineral deposition, the mineral deposition was stained with Alizarin Red S on day 21 after osteoinduction. hMSCs were exposed to different sizes and concentrations of silica NPs ((A) 0 μg/ml, (B)
S1-10 μg/ml, (C) S1-100 μg/ml, (D) S1-250 μg/ml, (E) S2-10 μg/ml, (F) S2-100 μg/ml, (G) S2-250 μg/ml, (H) S3-10 μg/ml, (I) S3-100 μg/ml, (J) S3-250 μg/ml) for 24 hours. Addition of silica NPs significantly enhance the mineralized nodules formation of hMSCs.